M005: RISK MANAGEMENT FOR MOUNTAIN OPERATIONS

TSP Number/Title	M005: Risk Management for Mountain Operations
Effective Date	Implement next class iteration upon receipt
Supersedes TSP(s)/Lessons	None
TSP User	The following courses use this TSP: Mountain Instructor Qualification Course (MIQC) Basic Mountaineering Course (BMC) Assault Climbers Course (ACC)
Proponent	United States Army Alaska, Northern Warfare Training Center
Improvement Comments	Send comments and recommendations on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: ATTN: TRAINING ADMINISTRATOR COMMANDANT USARAK NWTC 1060 GAFFNEY ROAD #9900 FORT WAINWRIGHT AK 99703-9900
Security Clearance/Access	Public domain
Foreign Disclosure Restrictions	The Lesson Developer in coordination with the USARAK NWTC foreign disclosure authority has reviewed this lesson. This lesson is releasable to foreign military students from all requesting foreign countries with Approval of Commandant USARAK NWTC.

PREFACE

Purpose

This training support package provides the instructor with a standardized lesson plan for presenting instruction for:

Task Number	Task Title
VI.0200	Risk Management for Mountain Operations

Technique of Delivery

Lesson Number	Instructional Strategy	Media
M004	Platform Instruction	PowerPoint

This TSP contains

M005: RISK MANAGEMENT FOR MOUNTAIN OPERATIONS

SECTION I **ADMINISTRATIVE DATA**

All courses including this lesson

Course Number(s)	Course Title (s)
	Mountain Instructor Qualification Course (MIQC)
	Basic Mountaineering Course (BMC)
	Assault Climbers Course (ACC)

Task(s) Taught or Supported

Task Number	Task Title
VI.0200	Risk Management for Mountain Operations

Task(s) Reinforced

N/A

Test Lesson Number

Hours	Lesson Number	Lesson Title
1	M020	BMC Review

Prerequisite Lesson(s) **None**

References

Number	Title	Date	Additional Information
	NWTC Mountain Operations Manual	FY04	Updated yearly
	NWTC Risk Management for Mountain Operations	FY04	Updated yearly
FM 3-100.12	Risk Management		http://www.adtdl.army.mil/
FM 3-97.6	Mountain Operations	November 2000	http://www.adtdl.army.mil/
FM 3-97.61	Military Mountaineering	August 2002	http://www.adtdl.army.mil/

Student Study Assignment	Students should read M005; students do not have to complete the practical exercise – this will be accomplished during classroom instruction.
Instructor Requirements	MIQC graduate, TAITC graduate
Additional Support Personnel Requirements	One assistant to run PowerPoint slide show.
Equipment Required	Computer with proxima capable of running PowerPoint presentations.
Materials Required	Instructor Materials: Platform Guidebook for M005 Student Materials: NWTC Mountain Operations Handbook; NWTC Pamphlet Risk Management for Mountain Operations
Classroom, Training Area and Range Requirements	Classroom
Ammunition Requirements	None
Instructional Guidance	Before presenting this lesson, instructors must thoroughly prepare by studying this lesson and identified reference material.

Branch Safety Manager Approval

NAME	Rank	Position	Date
Mark Gilbertson	**GS-09**	**Training Specialist**	

Proponent Lesson Plan Approvals

NAME	Rank	Position	Date
Peter Smith	**GS-12**	**Training Administrator**	

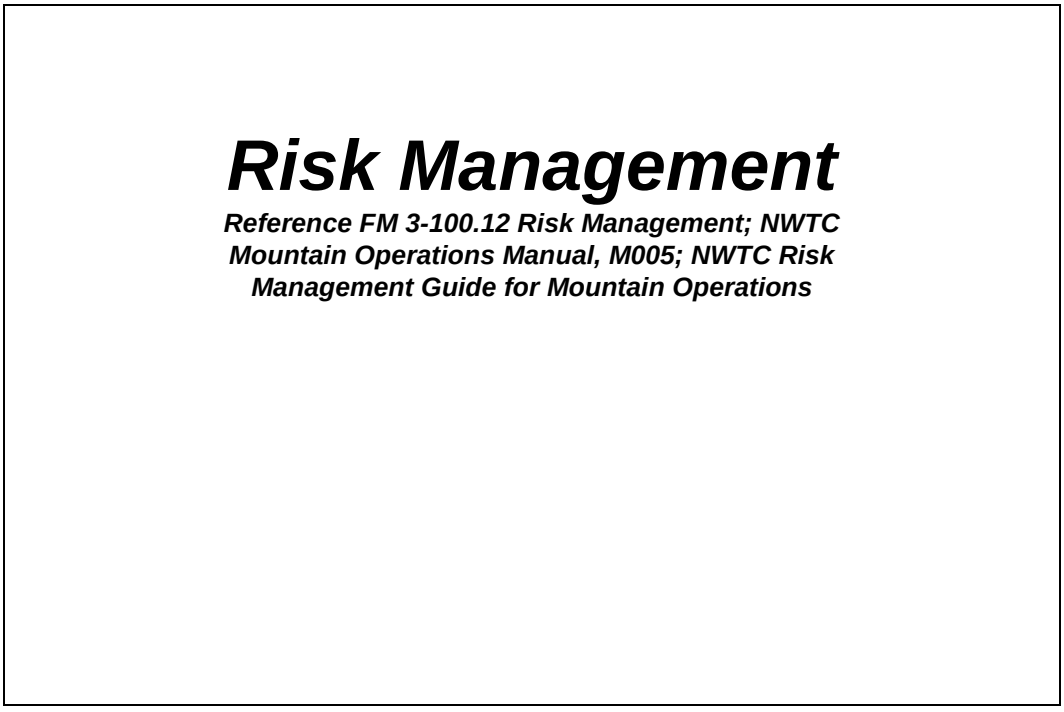
SECTION II **INTRODUCTION**

Method of Instruction: Platform
Instructor to student ratio: 1:75 (maximum)
Time of instruction: 50 minutes
Media: Computer with proxima

Motivator

(Slide1) In every operation, whether tactical training, combat, or operations other than war, force protection is essential to success. Historically, the U. S. Army has suffered more losses to accidents/non-battle injuries (including fratricide) than to enemy action while deployed in combat; it appears we are our own worst enemy. Typically, these accidents are the same types experienced in peacetime, during exercises at home, and at combat training centers. If we can learn to recognize the hazards that contribute to accidents, we can avoid or reduce the risks from the hazards.

Risk management is the army's principle risk-reduction process to help protect the force. The purpose of risk management is to identify operational risks, and take reasonable measures to reduce or eliminate the risks. It is a continuous ongoing process that carries on from mission to mission. Effective risk management will assist leaders and individuals at all levels in preventing accidents and eliminating or reducing the risks from hazards, thereby saving lives and preserving our combat power.



Terminal Learning Objective

At the completion of this lesson you (student) will:

ACTION	Conduct risk assessment and implement control measures to reduce risk in mountain operations
CONDITION	In a classroom environment
STANDARD	Conduct risk assessment and implement control measures to reduce risk in mountain operations IAW FM 3-100.12 and NWTC Risk Management Guide for Mountain Operations.

Safety Requirements

None

Risk Assessment Level

Low

Environmental Considerations

None

Evaluation

Students will be evaluated on the comprehension of lesson material by a written test.

Instructional Lead-in

Risk Management is the responsibility of everyone. Mountain operations have another dimension to consider – environmental hazards that can injure or kill soldiers and destroy equipment if these hazards are not considered and steps are not taken to mitigate these risk factors. The NWTC has produced a Risk Management Guide for Mountain Operations that allows leaders to assess risks and implement control measures for hazards specific to mountain operations in order to reduce the hazards to ensure overall operations are conducted safely and efficiently. This guide has been developed in accordance with the US Military FM 3-100.12, Risk Management. For this reason the NWTC RM Guide is also appropriate for any operation or training mission. The intent of the guide is to develop a logical way of thinking about risks associated with any mission.

(Play Video) (Slide 2)

SECTION III **PRESENTATION**

ELO A

ACTION	Familiarize soldiers with risk definitions
CONDITION	In a classroom environment
STANDARD	Familiarize soldiers with risk definitions IAW FM 3-100.12.

Learning Step/Activity 1 – Risk Definitions

a. (Slide 3) As we get started there are some definitions that need to be considered:

Risk Definitions

- ***Risk Management- continuous five step process to identify and control hazards***
- ***Risk Assessment- identification and assessment of hazards***
- ***Hazard- any actual or potential condition that can cause damage to personnel, the mission, or equipment***
- ***Risk- Probability of hazard occurring, expressed in terms of probability and severity***
- ***Probability- likelihood that hazard will occur***
  - ***Frequent- occurs often, continuously***
  - ***Likely- occurs several times***
  - ***Occasional- occurs sporadically***
  - ***Seldom- Remote possibility***
  - ***Unlikely- Can assume will not occur***

b. (Slide 4) Definitions continued:

Risk Definitions Cont.

- ***Severity- degree of damage to personnel/ equipment***
  - ***Catastrophic- Death, permanent damage, major damage to equipment, loss of ability to accomplish mission***
  - ***Critical- permanent partial disability, major equipment damage, significantly degraded mission***
  - ***Marginal- minor damage to personnel/ equipment, minor mission degradation***
  - ***Negligible- little or no adverse impact on personnel, equipment or mission***
- ***Risk Level***
  - ***Extremely High-loss of ability to accomplish mission***
  - ***High- significant degradation of mission capabilities***
  - ***Moderate- expected degradation of mission capabilities***
  - ***Low- Expected losses have little impact on mission***
- ***Controls- measures taken to reduce hazards***
- ***Residual Risk- level of risk remaining after controls selected***

ELO B

ACTION	Define the risk management process
CONDITION	In a classroom environment
STANDARD	Define the risk management process IAW FM 3-100.12.

Learning Step/Activity 1 – Risk Management Process

a. (Slide 5) The risk management process is a five step process used to identify and control hazards; it applies to any mission and any environment.

Risk Management Process

1. ***Identifying threats.***
2. ***Assessing threats to determine risks.***
3. ***Developing controls and making risk decisions.***
4. ***Implementing controls.***
5. ***Supervising and reviewing.***

ELO C

ACTION	Identify the principles for applying risk management
CONDITION	In a classroom environment
STANDARD	Identify the principles for applying risk management IAW FM 3-100.12.

Learning Step/Activity 1 – Principles for Applying Risk Management
a. (Slide 6) These are the basic principles that provide a framework for implementing the risk management process.

Principles for Applying Risk Management

No unnecessary risk should ever be taken

Risk decision must be made at the appropriate level of command

Risk is acceptable if potential benefits outweigh potential costs

Integrate risk management into planning at all levels.

ELO D	**ACTION**	Differentiate between objective and subjective hazards
	CONDITION	In a classroom environment
	STANDARD	Differentiate between objective and subjective hazards IAW the NWTC Mountain Operations Manual.

Learning Step/Activity 1 – Hazards

a. (Slide 7) ***Objective Hazards*** are natural processes that are not influenced by man. Snowstorms, lightening, temperature extremes, gravity, darkness, wind, rain, fog, avalanches, rockfall, high altitude, crevasses, cliffs, cornices; all of the impersonal dangers that exist in the mountains. ***Subjective Hazards*** are those that exist because the soldier is unprepared mentally or physically to meet the challenges that objective hazards present. Often this is a result of ignorance, improper training, poor judgment, inadequate equipment, poor conditioning, along with overconfidence, false pride, apprehension or fear. Mission accomplishment is another factor that may cause soldiers to ignore hazards.
This course focuses on providing tactics, techniques and procedures that will allow you to move safely in the mountain environment. The intent is to make you aware of the hazards that can conspire to injure or kill you or damage your equipment and give you some ways to mitigate these hazards to an acceptable level. Remember that these principles apply no matter what environment you are operating in.

Hazards

Objective hazards:

- ***natural processes not influenced by man***
- ***snowstorms lightening, temperature extremes, gravity, darkness, wind, rain, fog, avalanches, rock-fall, high altitude, crevasses, cliffs, cornices***

Subjective hazards:

- ***exist because the soldier is unprepared mentally, physically***
- ***often a result of ignorance, improper training, poor judgement, poor conditioning, along with overconfidence, false pride, apprehension or fear.***

ELO E	**ACTION**	Give an overview of the NWTC Risk Management for Mountain Operations Guide
	CONDITION	In a classroom environment
	STANDARD	Give an overview of the NWTC Risk Management for Mountain Operations Guide IAW this presentation.

Learning Step/Activity 1 – Overview of the NWTC RM for Mountain Operations Guide

a. (Slide 8) Note Students should turn to the appropriate section of the book as you narrate.

Turn to Section I. Section I will be discussed in detail during the remainder of this presentation. It is designed to help leaders assess unit operations.
Section II follows the same format as Section I, but has specific hazards already identified for mountain operations. It also has recommended control measures to mitigate these hazards and reduce the overall risk level for the operation.
Annex A is from FM 3-100.12. It gives a leader a way to take get a quick snapshot of the overall risk level for a certain operation. It works by comparing the probability of a certain hazard occurring against the effects that the hazard will produce to determine overall risk level. For example if the there is a thunderstorm approaching your unit and you are observing lightening strikes moving closer to your position and you know that a lightening strike near or on your position will produce catastrophic effects you know that there is an extremely high risk level associated with continuing operations.
Annex B gives some recommended equipment for the different classes of terrain experienced in the mountains
Annex C gives clothing and equipment guidelines for operations in different temperature ranges
Annex D is a nine line medical evacuation request
Annex E is the wind chill chart
Annex F is the Approval Authority Guidance (IAW USARAK 350-1)
Annex G contains blank Risk Assessment sheets for unit operations – these are the same ones found in Section I

Overview of Risk Management Guide

Section I: Risk Assessment for Unit Operations
Section II: Mountain Skills Worksheets
Annex A: Universal Risk Assessment Matrix
Annex B: Planning Considerations for Mountain Operations
Annex C: Planning Considerations for Cold Weather Operations (Temperature Zones)
Annex D: Nine Line MEDEVAC request
Annex E: Wind Chill Chart
Annex F: Approval Authority Guidance (IAW USARAK 350-1)
Annex G: Risk Assessment for Unit Operations (Blank Copies)

ELO F

ACTION	Utilize the five step risk management process
CONDITION	In a classroom environment
STANDARD	Utilize the five step risk management process IAW the NWTC Risk Management Guide for Mountain Operation

Learning Step/Activity 1 – Determining initial risk level

a. (Slide 9, 10 and 11) Turn to Section I. First let's look at the Risk Assessment Matrix for Mountain Operations and the Risk Assessment Worksheet for Mountain Operations. Part I of the process is to identify and assess operational areas or conditions that have risk associated with them. You will use the risk assessment matrix and the risk assessment worksheet to identify and record these risks. Then we move onto step two. But before moving on lets look at the matrix in detail.

Part I. Identify & Assess Operational Areas / Conditions that are Inherently Risky

- ***Write key mission information pertaining to the listed operational elements under assessment criteria.***
- ***Using the Risk Assessment Matrix for Cold Weather Operations, write the number which most accurately defines the status of the operational element in the appropriate risk value block.***
- ***Total the values and assign an overall risk level to the operation; move on to PART II...***

RISK ASSESSMENT MATRIX FOR MOUNTAIN OPERATIONS

Planning

CIRCLE ONE	Risk Value		SCORE:
	Preparatory Time		
Guidance	Optimum	Adequate	Minimal
FRAGO	3	4	5
OPORD	2	3	4
OPLAN/LOI	1	2	3

Mission Control

CIRCLE ONE	Risk Value			SCORE:
	Maneuver Element Size			
Leadership Mountain Experience	Battalion +	Company	Platoon	Squad / Tm.
None	7	6	5	4
Basic Level	6	5	4	3
Advanced	5	4	3	2

Soldier Endurance

CIRCLE ONE	Risk Value		SCORE:
	Soldier Preparation		
Environmental Preparation	Optimum	Adequate	Minimal
Nonacclimated	3	4	5
Part. Acclimated	2	3	4
Acclimated	1	2	3

Soldier Selection

CIRCLE ONE	Risk Value			SCORE:
	Soldier Experience			
Task	Extensive Fld Exp	Advanced Some Fld Exp	Basic Level Min Fld Exp	MOS Qual No Mtn Exp
Complex	3	4	5	6
Routine	2	3	4	5
Simple	1	2	3	4

Weather

CIRCLE ONE	Risk Value			SCORE:
	Exposure Duration			
Temperature (F) (Spec. Conditions)	<8 hrs.	8 - 24 hrs.	24 - 72 hrs.	Over 72 hrs.
56 - 79	1	1	1	1
33 - 55	1	1	2	3
<32 or >80	2	2	3	4
<10 or >90	3	4	4	5
<-20 or >100	5	6	7	8
(severe storms & wind, extreme cold)	6	7	8	9

Terrain

CIRCLE ONE	Risk Value		SCORE:
	Trafficability		
Environmental Hazards	Rough Walking (1st-2nd class)	Steep / Exposed (3rd-4th class)	Technical Climbing (5th class)
None Present	2	4	5
Present-Avoidable	3	5	6
Unavoidable	5	6	7

Rest and Maintenance

CIRCLE ONE	Risk Value		SCORE:
	Equipment Status		
Personnel Rest	Optimum	Adequate	Minimal
<4 hrs. (in 24 hrs.)	3	4	5
6 hrs. (in 24 hrs.)	2	3	4
>8 hrs. (in 24 hrs.)	1	2	3

Numeric Value			
1, 2	3, 4	5, 6	7, 8, 9
Low Risk	Medium	**High Risk	***Extreme
7 to 12	13 to 23	24 to 35	36 to 44
Cumulative Score			

***** High risk operations require coordination, before executing the mission, with the next higher level of command external to the organization making the assessment. If an area receives a 5 or 6 value, the overall rating is high risk.***
****** Extremely high risk operations require the closest scrutiny. If an area receives a 7 or higher value, the overall rating is extreme risk.***

RISK ASSESSMENT WORKSHEET FOR MOUNTAIN OPERATIONS

PART I. Identify & Assess Operational Areas / Conditions that are Inherently Risky.

*Write key mission information pertaining to the listed operational elements under **assessment criteria**. Using the Risk Assessment Matrix for Cold Weather Operations (preceding page), write the number which most accurately defines the status of the operational element in the appropriate **risk value** block. Total the values and assign an **overall risk level** to the operation; move on to PART II...*

ELEMENT	*ASSESSMENT CRITERIA*	*RISK VALUE*
Planning		
Mission Control		
Soldier Endurance		
Soldier Selection		
Weather		
Terrain		
Rest & Maintenance		

OVERALL RISK LEVEL: _____ ***TOTAL:*** _____

Learning Step/Activity 2 – Using the charts

a. (Slide 12) Lets look at each of the charts in detail. Each chart gives a look at a certain element common to most operations. It allows you to assign a numerical value to each part of the operation. A low score means less risk. A higher score means greater risk. For example with planning, if you are given a FRAGO that in one hour you are to conduct a room to room search of a suspected terrorist hide out, what score would you give on the planning chart. I would say this is minimal preparatory time and little guidance so this gives a score of 5 (where the Minimal and FRAGO intersect). This is the highest risk value on this chart. You would circle the number five and write the score in the upper right hand corner of the box. Then you record this information on the Risk Assessment Worksheet for Mountain Operations; in this case you would write 'FRAGO, 1 hour prep for clear a building' under Assessment Criteria and a 5 under Risk Value. Continue this process for each chart.

Planning

CIRCLE ONE	RISK VALUE		SCORE:
Guidance	Preparatory Time		
	Optimum	Adequate	Minimal
FRAGO	3	4	5
OPORD	2	3	4
OPLAN/LOI	1	2	3

b. (Slide 13) Mission control is a look at the amount of leadership with mountain experience/training and the size of the unit conducting the operation. Small units tend to do function better in a mountainous environment provided they have training and or experience with mountain operations. Larger units add to the complexity of a mountain operation because of the difficulty of indirect fire support, re-supply and casualty evacuation. Again compare the size of the unit and the amount of experienced leadership, circle the number and write it in the upper right hand corner of the chart. Record the information on the worksheet.

Mission Control

CIRCLE ONE	RISK VALUE			SCORE:
Leadership MTN Experience	Maneuver Element Size			
	BN (+)	Company	Platoon	SQD/TM
None	7	6	5	4
Basic	6	5	4	3
Advanced	5	4	3	2

c. (Slide 14) Soldier endurance deals with the fitness level of the individual soldiers in the unit. How much preparation have they had? This includes training on the particular environment (the mountains of Afghanistan for example), mountain specific training, and any actual experience in the environment (actual environmental preparation in the area of operation). One note for all of these charts is that this is a subjective evaluation by you the leader. For example, you may choose to go with the weakest link in your unit for soldier endurance – a number of soldiers that have just arrived to you unit and have not yet acclimated and have only received classroom instruction on the dangers of operating in the mountains. Or, you may chose to go with the majority of your unit that is a well-trained, highly experienced mountain unit because you feel they can take care of and teach the new soldiers during the operation. There is no wrong answer.

Soldier Endurance

CIRCLE ONE	RISK VALUE		SCORE:
Environmental Preparation	Soldier Preparation		
	Optimum	Adequate	Minimal
Non-acclimated	3	4	5
Part.-acclimated	2	3	4
Acclimated	1	2	3

d. (Slide 15) Soldier selection deals with the relationship between the complexity of the task and the experience level of the soldier. Again circle the number and write it in the upper right hand corner. Record the information on the worksheet.

Soldier Selection

CIRCLE ONE	RISK VALUE			SCORE:
Task	Soldier Experience			
	Extensive Fld Exp	Advanced Some Fld Exp	Basic Level Min Fld Exp	MOS Qual No MTN Exp
Complex	3	4	5	6
Routine	2	3	4	5
Simple	1	2	3	4

e. (Slide 16) Weather measures the duration of exposure to the current and anticipated conditions. Use the wind chill chart to help determine the temperature range.

Weather

CIRCLE ONE	RISK VALUE			SCORE:
Temperature (F) (Spec. Conditions)	Exposure Duration			
	<8 hrs.	8-24 hrs.	24-72 hrs.	Over 72 hrs.
56-79	1	1	1	1
33-55	1	1	2	3
<32 or >80	2	2	3	4
<10 or >90	3	4	4	5
<-20 or >100	5	6	7	8
(Severe storms, Wind, Ext. cold)	6	7	8	9

f. (Slide 17) Use the wind chill chart to help determine the temperature range.

Wind Chill

AIR TEMPERATURE IN FAHRENHEIT

WIND SPEED	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95

WIND SPEED BASED ON MEASURES AT 33 FEET HEIGHT. IF WIND SPEED MEASURED AT GROUND LEVEL, MULTIPLY BY 1.5 TO OBTAIN WIND SPEED AT 33 FEET IN HEIGHT AND THEN UTILIZE CHART.

g. (Slide 18) Terrain is a look at the difficulty of the terrain (using the Walzenbach rating system) versus the objective hazards present in the area.

Terrain

CIRCLE ONE	**RISK VALUE**		SCORE:
Environmental Hazards	Trafficability		
	Rough Walking 1st-2nd class	Steep/Exposed 3rd-4th class	Technical Climbing 5th class
None Present	2	4	5
Present-Avoidable	3	5	6
Unavoidable	5	6	7

h. (Slide 19) Rest and maintenance gives an overall picture of the health of the unit. Has equipment been maintained recently or have continuous operations degraded the capability of mission essential equipment? How much rest have the soldiers in the unit been able to get? Consider the leaders as they tend to get less rest than the soldiers.

Rest and Maintenance

CIRCLE ONE	RISK VALUE		SCORE:
Personnel Rest (in 24 hrs.)	Equipment Status		
	Optimum	Adequate	Minimal
<4 hrs	3	4	5
6 hrs	2	3	4
>8 hrs	1	2	3

Learning Step/Activity 3 – Conduct steps 2-5 of the risk management process

a. (Slide 20) In the next step, you define specific hazards that could occur during the operation; the risk level is then determined by asking two questions: What is the likelihood of a mishap? and What degree of injury or equipment damage is possible? The Universal Risk Assessment Matrix can also help determine the risk level.

Part II. Assessing threats to determine risks

- ***Assess the specific hazards associated with risky elements of this operation.***
- ***Determine an accurate risk level for each specific hazard by answering these two questions:***
  - ***What is the likelihood of a mishap?***
  - ***What degree of injury or equipment damage is possible?***

The Universal Risk Assessment Matrix (Annex A) describes the various risk levels in detail.

b. (Slide 21 and 22) The next step is to develop control measures that will reduce or eliminate risk associated with these hazards. Implementing control measures will allow you to re-assess the risk level associated with a particular hazard. For example if the possibility of falling off a very narrow ledge during movement is high, installing a hand line will reduce the risk of falling from the ledge and reduce the overall risk level of falling to medium or low. After implementing control measures you can determine the overall risk level of the operation. The overall risk level is the most serious remaining residual risk level after control measures are put into place.

PART III. Develop Control Measures & Re-assess the Overall Risk Level of the Operation

- ***Identify control measures you will implement to minimize (or eliminate) the risks associated with these hazards.***
- ***Re-assess the risk level of these hazards. The <u>Planning Considerations for Cold Weather Operations</u> guide (Annex B) describes many of the mission essentials to consider when operating in cold environments.***

PART III. Develop Control Measures & Re-assess the Overall Risk Level of the Operation

- ***The overall risk level for the mission is now determined by the most serious remaining residual risk level.***
- ***See Annex E for Approval Authority Guidance for residual risk level.***

c. (Slide 23) This is a critical step in the process. Identifying a myriad of risks and control measures is useless without a plan to implement them. Everyone must be aware of the control measures and how they will be utilized. Leaders must ensure that these plans, orders SOPs etc. are briefed and understood by all and that the resources exist to carry them out.

Part IV. Implement Controls

- ***The procedures for controlling risk must be integrated into plans, orders, standing operating procedures, written and verbal orders, preliminary training, and through other channels that ensure the procedures will be effectively used during the actual operation.***
- ***Implementation involves the entire chain of leadership as a team, assuring that the full range of approved operational risk controls are in place and ready to go.***

d. (Slide 24) As leaders this is also a crucial step. The process continues throughout the mission and conditions may change that increase the risk level or render control measures ineffective. Leaders must continually assess the operational risks and make adjustments as the situation changes or progresses.

Part V. Supervise And Evaluate

- ***The leader uses the same supervision techniques (on-the-scene, spot check, performance indicators) to monitor risk controls that are used to monitor overall operations.***
- ***Continually assess operational risks and evaluate results, including the effectiveness of risk-management controls.***
- ***Information for steps I-V should be recorded on the Risk Management Worksheet.***

e. (Side 25) The entire process is recorded on this form. This is briefed to higher and the approval authority signs off in Block 15.

1. Organization and Unit											*2. Page ____ of _____*	
3. Mission/Task					*4. Date/Time Group Begin: End:*						*5. Date Prepared:*	
6. Prepared by: (rank, name, duty position)												
7. Operational phase in which the mission/task will be conducted:												
8. Identified Hazards	*9. Assess the Hazards: Initial Risks:*				*10. Develop Control Measures for Identified Hazards: Specific measures taken to reduce the probability and severity of a hazard*	*11. Make Risk Decisions: Remaining risks:*				*12. How to Implement Controls: Include SOPs, references, written and verbal orders, etc.*	*13. Supervision and evaluation by: Continuous leader checks, buddy system, situation reports, etc.*	
	L	*M*	*H*	*E*		*L*	*M*	*H*	*E*			
14. Remaining Risk Level After Countermeasures are Implemented: (circle one) *LOW (L) MEDIUM (M) HIGH (H) EXTREMELY HIGH (E)*												
15. Risk Decision Authority Level: (approval authority signature block) *If initial risk level is medium, high or extremely high, brief risk decision authority at that level on controls and countermeasure used to reduce risks. (Signature indicates that the appropriate risk decision authority was briefed of the initial risk level, control measures taken and appropriate resources requested).*												

f. (Slide 26) This matrix explains what risk level both a single numeric value and the cumulative score will give (remember you must check both); it also identifies the approval authority necessary to clear the training at each risk level. Note the levels of command that must approve a high risk or extreme high risk operation prior to execution (as per USARAK 350-1).

Quick Reference Guide

Risk Level	Low	Medium	High*	Extreme**
Numeric Value	1,2	3,4	5,6	7,8,9
Cumulative Score	7 – 12	13 –23	24-36	36-40
General Clearance Level Guidelines	Company Commander	Battalion Commander	Brigade; major subordinate command commander	Major subordinate command; major command commander

***High risk operations require coordination with the next higher level of command external to the organization making the assessment.**

****Extremely high risk operations require the closest scrutiny. If an area receives a 7 or higher value, the overall rating is extreme risk.**

ELO G

ACTION	Using the knowledge you have gained, conduct a risk assessment for this scenario
CONDITION	In a classroom environment
STANDARD	Using the knowledge you have gained, conduct a risk assessment for this scenario IAW the NWTC Risk Management Guide for Mountain Operations.

Learning Step/Activity 1 – Conduct Initial Risk Assessment

a. (Slide 27) Note: Give soldiers about 10 minutes to work through the scenario.

Scenario 1

You are a Light Infantry BN rifle platoon leader with a platoon currently at full strength. You have just been tasked by your company commander to prepare your soldiers for an OPFOR mission and have been provided with a detailed OPORD. In 72 hrs. you will depart on foot for training area 4A and prepare a linear ambush. Area 4A is mountainous terrain with several creeks in deep ravines(very steep banks), similar to the environment around your post, Ft. Hayes, AK. There are no roads that support vehicle traffic and the closest LZ/PZ is 13Ks away where Bear creek meets a fire break. You will have 2 hrs. upon arrival to prepare positions. Your route to the ambush site will require you to use the creek bottom as the main avenue of approach. Once you arrive at the ambush site you will need to negotiate the 65 ft., rock/dirt bank of Bear creek to establish your positions. Your unit will be carrying all required equipment/rations to last for three days and you must evacuate all casualties to the pre-determined PZ 13k away. After 72 hrs. at this location you will be extracted by two CH-47s.

You and your PSG have been stationed in Alaska for two years and have both attended a Basic Mountaineering Course. The rest of your platoon is generally new and three other NCOs have limited mountaineering experience. All weapon systems are operational and you do have basic mountaineering equipment. Prior to this mission, your platoon was pulling security for the BN TOC.

The weather over the past week has been generally mild with temperatures in the mid 30s at night and reaching the low 50s during the day. Winds have been generally calm at approximately 10 mph. There has been enough rain to bring the water level up in all creeks/rivers around Ft. Hayes. No more precipitation is expected, however, daytime highs may reach the high 50's and the nighttime lows could drop below freezing

Conduct an Initial Risk Assessment for this operation, completing the RA Matrix and the RA Worksheet.

b. (Slide 28) Here is what I came up with for an initial risk assessment:

RISK ASSESSMENT WORKSHEET FOR MOUNTAIN OPERATIONS

PART I. Identify & Assess Operational Areas / Conditions that are Inherently Risky.

*Write key mission information pertaining to the listed operational elements under **assessment criteria**. Using the Risk Assessment Matrix for Cold Weather Operations (preceding page), write the number which most accurately defines the status of the operational element in the appropriate **risk value** block. Total the values and assign an **overall risk level** to the operation; move on to PART II...*

ELEMENT	*ASSESSMENT CRITERIA*	*RISK VALUE*
Planning	***OPORD, 72 hours***	2
Mission Control	***Basic, Platoon***	4
Soldier Endurance	***Partially Acclimated, 72 hours***	2
Soldier Selection	***Routine, Basic, Minimum Experience***	4
Weather	***32 degrees, > 72 hours***	4
Terrain	***Unavoidable, 3rd and 4th class terrain***	6
Rest & Maintenance	***> 8 hours, optimum***	1

OVERALL RISK LEVEL: ***HIGH*** ***TOTAL:*** ***23***

Learning Step/Activity 2 – Steps 2-5

c. (Slide 29) Here are steps 2-5…

1. Organization and Unit: Infantry Platoon										*2. Page 1 of 1*	
3. Mission/Task: Mountain Movement to Ambush Site (OPFOR)					*4. Date/Time Group Begin: End:*					*5. Date Prepared:*	
6. Prepared by: (rank, name, duty position) LT. BULLWINKLE											
7. Operational phase in which the mission/task will be conducted:											
8. Identified Hazards	*9. Assess the Hazards: Initial Risks:*				*10. Develop Control Measures for Identified Hazards: Specific measures taken to reduce the probability and severity of a hazard*	*11. Make Risk Decisions: Remaining risks:*				*12. How to Implement Controls: Include SOPs, references, written and verbal orders, etc.*	*13. Supervision and evaluation by: Continuous leader checks, buddy system, situation reports, etc.*
	L	*M*	*H*	*E*		*L*	*M*	*H*	*E*		
Falls enroute to ambush site			*H*		*Route selection by Level 1 Mountaineers. Fixed ropes installed by experienced personnel on exposed terrain.*		*M*			*Map recon of route; potential hazard areas identified; fixed ropes installed; experienced mountaineers lead the platoon*	
Cold Weather Injuries		*M*			*Temperature Zone II guidelines for clothing and equipment*	*L*				*PCC/PCIs*	*Medical personnel conduct frequent checks of personnel to mitigate problems before they become casualties*
CASEVAC difficulties			*H*		*Prior coordination with aviation to discuss movement route and LZ locations enroute to ambush site. Redundant communications; minimum 1 EMT or equivalent personnel accompany platoon*	*L*				*Route and LZ's enroute identified and CASEVAC plan briefed to all leaders.*	
14. Remaining Risk Level After Countermeasures are Implemented: (circle one) Battalion Commander *LOW (L)* *MEDIUM (M)* *HIGH (H)* *EXTREMELY HIGH (E)*											
15. Risk Decision Authority Level: (approval authority signature block) *If initial risk level is medium, high or extremely high, brief risk decision authority at that level on controls and countermeasure used to reduce risks. (Signature indicates that the appropriate risk decision authority was briefed of the initial risk level, control measures taken and appropriate resources requested).*											

ELO H

ACTION	Using the knowledge you have gained, conduct a risk assessment for this scenario
CONDITION	In a classroom environment
STANDARD	Using the knowledge you have gained, conduct a risk assessment for this scenario IAW the NWTC Risk Management Guide for Mountain Operations.

Learning Step/Activity 1 – Conduct Initial Risk Assessment

a. (Slide 30) Note: Give soldiers about 10 minutes to work through the scenario.

Scenario 2

You are the commander of Co. B, 2/287 INF (light) and are currently participating in Operation Mountain Warlord, a major NATO exercise in northern Alaska designed to measure your unit's warfighting capabilities in a mountainous environment. Your company completed a forced road march about 6 hrs. ago and is now finishing up the last maintenance tasks for the day. The troops did very well on the march, arriving in the new area of operation a full hour ahead of the rest of the battalion. It appears your pre-exercise training back at Ft. Hayes has paid off. Your soldiers have been eating and drinking well, but some appear to be a little run down from the march. It is now 2030 hrs. At 2300 (about two hours after racking out) you are wakened by the BN commander and told Co. B must be prepared to move out at 0900. You have been tasked to help 1st BN secure an airfield 3 km away. He gives you a brief order defining the situation. You will depart on foot and move x/country linking up with 1st BN just south of the airfield. While conducting a map recon you discover a glacier fed stream your company must cross. It appears to be approximately 70 ft. wide and the S-2 estimates it being 4 ft. deep and fast moving. You have all required equipment to conduct a stream crossing except PFDs. You must provide your own food, ammo, and other mission essentials(PFDs can be acquired from C/225 EN).

Though you don't relish the tasking, you know your soldiers have been eager to prove themselves during the exercise and will handle the mission well. You are fortunate that Co. B is full of highly qualified, basic level mountaineers who have been training in this environment since the beginning of last month. You decide the troops can sleep until 0500; 4 hrs. will be sufficient time to prepare for the mission. The temperature is expected to be 50 degrees by morning, and there is virtually no wind. The terrain from your present location to the airfield is generally rolling with the stream being the only natural obstacle.

Conduct a complete Risk Assessment, and make a recommendation to your commander.

b. (Slide 31) Here is what I came up with for an initial risk assessment:

RISK ASSESSMENT WORKSHEET FOR MOUNTAIN OPERATIONS

PART I. Identify & Assess Operational Areas / Conditions that are Inherently Risky.

*Write key mission information pertaining to the listed operational elements under **assessment criteria**. Using the Risk Assessment Matrix for Cold Weather Operations (preceding page), write the number which most accurately defines the status of the operational element in the appropriate **risk value** block. Total the values and assign an **overall risk level** to the operation; move on to PART II...*

ELEMENT	*ASSESSMENT CRITERIA*	*RISK VALUE*
Planning	***FRAGO, adequate***	4
Mission Control	***Basic, company***	5
Soldier Endurance	***Acclimated, minimal***	5
Soldier Selection	***Complex, Basic qualified***	5
Weather	***50, > 24 hours***	2
Terrain	***Unavoidable, 5th class***	7
Rest & Maintenance	***About 8 hours, adequate***	2

OVERALL RISK LEVEL: ***EXTREME*** ***TOTAL:*** ***30***

Learning Step/Activity 2 – Steps 2-5

c. (Slide 32) Here is what I came up with for steps 2-5:

1. Organization and Unit: B Co. 2/287 IN										***2. Page 1 of 1***	
3. Mission/Task: Move to and link-up with 1st battalion vic WF12345678 in order to secure an airfield.					***4. Date/Time Group Begin: End:***					***5. Date Prepared:***	
6. Prepared by: (rank, name, duty position) CPT I. .M. SQUARDAWAY											
7. Operational phase in which the mission/task will be conducted: Operation Mountain Warlord											
8. Identified Hazards	***9. Assess the Hazards: Initial Risks:***				***10. Develop Control Measures for Identified Hazards: Specific measures taken to reduce the probability and severity of a hazard***	***11. Make Risk Decisions: Remaining risks:***				***12. How to Implement Controls: Include SOPs, references, written and verbal orders, etc.***	***13. Supervision and evaluation by: Continuous leader checks, buddy system, situation reports, etc.***
	L	***M***	***H***	***E***		***L***	***M***	***H***	***E***		
Drowning				***E***	***Coordinate for PFDs; identify weak/non-wsimmers; advanced party to recon, secure and establish crossing site; rehearse steam crossing procedures prior to LD***			***H***		***Review NWTC RM for Mountain Operations Stream Crossing procedures***	***Advanced party supervises stream crossing***
Hypothermia			***H***		***Complete change of clothing for each soldier carried/waterproofed***		***M***			***Review NWTC RM for Mountain Operations Stream Crossing procedures and Temperature Zone guidance***	***Enforce clothing change after crossing; medics stay at site to monitor until stream crossing complete***
Fratricide during link-up				***E***	***Review/rehearse link-up procedures with 1st battalion chain of command***			***H***		***Review 1st battalion SOP with 1ST battalion leadership via radio at a minimum***	
14. Remaining Risk Level After Countermeasures are Implemented; (circle one) Brigade Commander LOW (L) MEDIUM (M) HIGH (H) EXTREMELY HIGH (E)											
15. Risk Decision Authority Level: (approval authority signature block) If initial risk level is medium, high or extremely high, brief risk decision authority at that level on controls and countermeasure used to reduce risks. (Signature indicates that the appropriate risk decision authority was briefed of the initial risk level, control measures taken and appropriate resources requested).											

SECTION IV **SUMMARY**

Method of Instruction: Lecture
Instructor to student ratio 1:75
Time of instruction 5 (minutes)
Media: PowerPoint

Final Thoughts

- ***Remember:***
  - ***Implement the controls***
  - ***Supervise and evaluate***
- ***Risk Management is not an <u>event</u>, it is a continuous process.***
- ***There is no approved solution or textbook answer. <u>You as a leader must be willing to take responsibility for your risk assessment.</u>***
- ***The process should become second nature, muscle memory, reflexive.***
- ***Put tangible meaning to your risk assessment***

Check on Learning

1. What are the five steps to the risk management process?
Identifying threats, assessing threats to determine risks, developing controls and making risk decisions, implementing controls, supervising and reviewing.

2. For a HIGH risk operation, who must approve the mission?

The first 0-6 in the chain of command.

Review and Summarize Lesson

The Terminal Learning Objective for this lesson was:

ACTION	Conduct risk assessment and implement control measures to reduce risk in mountain operations
CONDITION	In a classroom environment.
STANDARD	Conduct risk assessment and implement control measures to reduce risk in mountain operations IAW FM 3-100.12 and NWTC Risk Management Guide for Mountain Operations.

Transition to next lesson

As per NWTC training schedule; dependent upon course in conduct.

SECTION V	STUDENT EVALUATION
Testing Requirements	**Students will be tested on their knowledge of the characteristics of mountain environments during a one hour written examination at the conclusion of the course (Refer to training schedule for date/time of exam).**
Feedback Requirement	**a. Instructors will require students to conduct risk assessments for each event on the training schedule prior to execution. Instructors will review this assessment with their squads.** **b. Provide remedial training as required.**